

PATENT ABSTRACTS OF JAPAN

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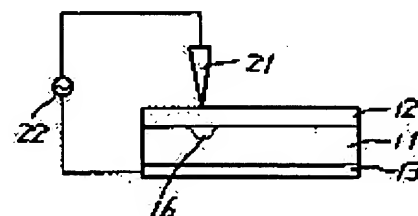
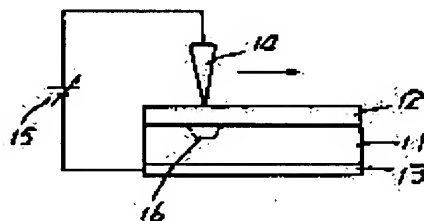
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(54) SEMICONDUCTOR RECORDING AND REPRODUCTION SYSTEM

(57)Abstract:

PURPOSE: To make recording and reproduction of high density possible by forming an electret material film of a semiconductor substrate and then by injecting electric charge into this film for recording and detecting the capacity of a depletion layer for reproduction.

CONSTITUTION: On semiconductor substrate 11 of silicon, electret material film 12 such as "Teflon " is formed and this is provided on conductive substrate 13 to constitute a recording medium. Between this substrate 13 and recording head 14, recording signal 15 is applied. As a result, charge corresponding to the signal is injected into material film 12 to change film 12 into an electret. At this time, an electric field of film 12 forms depletion layer 16 in substrate 11 right under it, generating depletion layer capacity. Since depletion layer 16 varies in thickness according to the magnitude of the signal voltage, a recording signal is recorded through the scanning of head 14. For reproduction, conductive reproduction head 21, applied with high-frequency signal 22, is relatively moved on a signal recording track to measure electrostatic capacity between head 21 and substrate 13. Therefore, even when the track width is narrow, recording and reproduction come into effect, so that high density will be realized.



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